Development of Obesity After VMH Lesion

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Development of Obesity After VMH Lesion: Involvement of Hyperphagia, Parasympathetic and Sympathetic Factors. B. BALKAN, A. B. STEFFENS and J. H. STRUBBE. *Department of Animal Physiology, University of Groningen, Haren, The Netherlands.*

The results of these studies in *ad libitum* and absolute pair-fed resting or swimming VMH lesioned animals show that obesity, hyperinsulinemia and the vagally evoked preabsorptive insulin release occur even though hyperphagia is prevented. During glucose tolerance tests, glucose homeostasis is normal, whereas during light exercise glucose seems to be used more preferentially than in controls. This is probably due to altered insulin levels and catecholamine sensitivity. Therefore, metabolism in VMH lesioned animals appears to be directed to fat storage and preservation resulting in obesity.

Effects of Selected Antidepressants on Food Intake and Body Energy Balance in Rats. G. BAUTZ, N. SPIRT, D. CITERONE and L. A. CAMPFIELD. *Neurobiology and Obesity Research, Hoffmann-La Roche Inc., Nutley, NJ, U.S.A.*

We have found that some antidepressants (ADS) have the ability to decrease feed efficiency (FE) of individually caged rats. ADS we have tested include fluoxetine, imipramine, amitriptyline (AMI), phenelzine and tranylcypromine. All of these compounds are thought to raise the synaptic concentration of serotonin (5-HT). Most ADS tested produce a profound and significant reduction of FE. An entire spectrum of temporal effectiveness was evident. The relative lack of effectiveness of AMI and the differential temporal effects of other ADS suggest that properties other than a simple increase in the synaptic 5-HT concentration may be responsible for these effects on energy balance.

Hyperphagia, Obesity and Hypothalamic Neuropeptides. B. BECK, A. BURLET, J. P. NICOLAS and C. BURLET. *INSERM U.308, Mécanismes de Regulation du Comportement Alimentaire, F-54000 Nancy, France.*

Central injection of neurotensin (NT) induces a reduction of food intake whereas neuropeptides Y (NPY) has orexigenic effects. The aim of this study was to determine in obese Zucker rats the status of NT and NPY in brain nuclei involved in the regulation of food intake. The NT content was significantly decreased in obese Zucker rats when compared with lean Zucker rats in the paraventricular (PVN; −31·8%), ventromedian (VMN; −66·8%) suprachiasmatic nuclei (SCH; −46·9%). NPY in obese rats was not modified in the VMN but was significantly increased in the PVN (61·3%) and in the SCH (94·6%). The important variations of NT and NPY observed in obese Zucker rats agree with the existence of hyperphagia in this strain of rat.

Hyperoxia Increases Salt Intake in Spontaneously Hypertensive Rats. R. BEHM, A. LETKUS, J. U. ROOS and K. RÜCKBORN. *Department of Physiology, W.-Pieck University Rostock, GDR.*

To clarify further the role of the peripheral arterial chemoreceptors in salt intake we examined the effect of hyperoxia on voluntary salt intake in conscious SHR. After a control period of 8 days of normoxia the rats were subjected to 4 days of normobaric hyperoxia (50% O_2). This was followed by a 5-day normoxic period. Exposure of the SHR to hyperoxia resulted in a significant increase in salt intake, saline preference and water intake from the second to the fourth day of the hyperoxic period. These and our previous results suggest that there seems to be a link between chemoreceptor activity and voluntary salt intake in SHR.